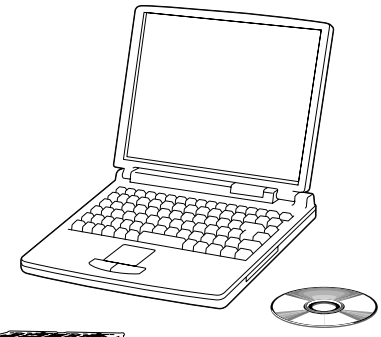
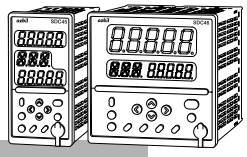
azbil

No. CP-UM-5458E

SLP-C45
Smart Loader Package
for the
SDC45/46
Digital Indicating Controller
User's Manual





Thank you for purchasing the SLP-C45 Smart Loader Package for SDC45/46 . This manual contains information for ensuring correct use of the SLP-C45. It also provides necessary information for installation, maintenance, and troubleshooting.

This manual should be read by those who design and maintain devices that use the SDC45/46 and SLP-C45.

Be sure to keep this manual nearby for handy reference.

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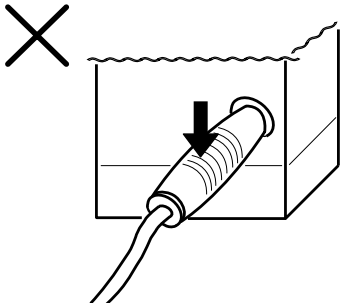
IMPORTANT

Do not apply too much force when connecting the loader plug. Doing so might damage the instrument.



Handling Precautions

Application of excessive force to the loader plug might cause communications failure. If this happens, reconnect the loader plug correctly.

NOTICE

Be sure that the user receives this manual before the product is used.

Copying or duplicating this user's manual in part or in whole is forbidden. The information and specifications in this manual are subject to change without notice.

Considerable effort has been made to ensure that this manual is free from inaccuracies and omissions. If you should find an error or omission, please contact the azbil Group.

In no event is Azbil Corporation liable to anyone for any indirect, special or consequential damages as a result of using this product.

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Conventions Used in the Manual

The following conventions are used in this manual:

! Handling Precautions :
Handling Precautions indicate items that the user should pay attention to when handling the SLP-C45.

Note Notes indicate useful information that the user might benefit by knowing.

☞ This indicates the item or page that the user is requested to refer to.

(1), (2), (3) Numbers within parentheses indicate steps in a sequence or indicate corresponding parts in an explanation.

[OK] button Indicates a selection button in screens displayed on the personal computer.

[Option] Indicates messages and menus displayed on the personal computer.

>> Indicates the result of an operation, details displayed on the personal computer or devices, or the state of a device after an operation.

[Ctrl] key, [a] key Indicates keys on the keyboard.

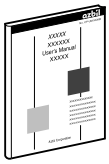
[Ctrl]+[a] keys Indicates the operation of pressing the [a] key while the [Ctrl] key is held down.

Unpacking

Check the following items when removing the SLP-C45 from its package:

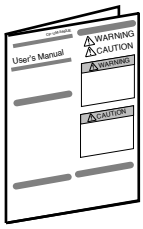
1. Check the model No. to make sure that you have received the product that you ordered.
2. Check the SLP-C45 for any apparent physical damage.
3. Check the contents of the package against the packing list to make sure that all accessories are included in the package.

After unpacking, handle the SLP-C45 and its accessories taking care to prevent damage or loss of parts.
If an inconsistency is found or the package contents are not in order, contact your dealer immediately.

Name	Model No.	Qty	Remarks
SLP-C45 System disc	SLP-C45J60	1	CD-ROM. In addition to the SLP-C45 program, this CD contains the SLP-C35 engineering tool for the SDC15/25/26/35/36.
USB loader cable	-	1	
User's Manual 	CP-UM-5458E	1	This manual.

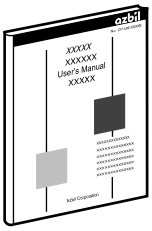
The Role of This Manual

A total of five different manuals are available for the SDC45/46. Read them as necessary for your specific requirements. If a manual you require is not available, contact the azbil Group or its dealer.
Additionally, you can download necessary manuals from "http://www.azbil.com".



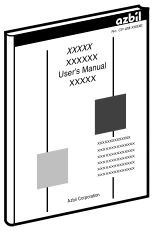
SDC45/46 Digital Indicating Controller Installation Instructions
Manual No. CP-UM-5445E

This manual is supplied with the SDC45/46. Personnel in charge of design and/or manufacture of a system using the SDC45/46 must thoroughly read this manual. This manual describes the safety precautions, installation, wiring, primary specifications, and transitions of key operations and displays. For further information about operation, refer to another manual, Installation and Configuration.



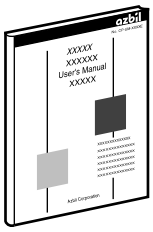
SDC45/46 Digital Indicating Controller User's Manual for Displays and Settings **Manual No. CP-SP-1265E**

The manual is a reference document necessary to set or change data. The manual lists up the displays, setup items, setting ranges, and initial values.



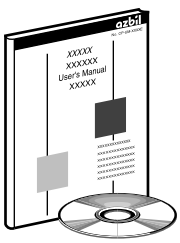
SDC45/46 Digital Indicating Controller User's Manual for Installation and Configuration **Manual No. CP-SP-1218E**

Personnel in charge of design, manufacture, operation, and/or maintenance of a system using SDC45/46 must thoroughly read this manual. This manual also describes the installation, wiring, connections for communication, all functions and settings of the SDC45/46, operating procedures, troubleshooting, and detailed specifications.



SDC45V/46V Digital Indicating Controller User's Manual for Computational Functions **Manual No. CP-SP-1275E**

It describes the computation functions of the SDC45V/46V. Please read it together with the Installation and Configuration manual (CP-SP-1218E) and the Displays and Settings manual (CP-SP-1265E).



SLP-C45 Smart Loader Package for the SDC45/46 Digital Indicating Controller **Manual No. CP-UM-5458E**

This manual.

This manual is supplied with the SLP-C45 Smart Loader Package. The manual describes the software used to make various settings for the SDC45/46 using a personal computer. Personnel in charge of design or setting of a system using SDC45/46 must thoroughly read this manual. The manual describes installation of the software into a personal computer, operation of the personal computer, various functions, and setup procedures.

Organization of the Manual

This manual is organized as follows:

Chapter 1. INTRODUCTION

Be sure to read this chapter before you start using the Smart Loader Package. This chapter describes the required operating environment for the personal computer, tells how to install the package, and briefly introduces its features.

Chapter 2. STARTING AND QUITTING THE LOADER

This chapter describes how to start and quit the loader.

Chapter 3. SETUP

This chapter describes how to set up the data.

Chapter 4. MONITORING

This chapter describes how to change the settings, as well as the screens monitoring the operation status.

Chapter 5. TROUBLESHOOTING

This chapter describes error messages that are displayed when a problem occurs, and tells how to remedy the problem.

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Chapter 1. INTRODUCTION

1 - 1 Overview

The SLP-C45 (simply called “the SLP” from here on) is a software engineering tool for the SDC45/46 (simply called “the SDC” from here on).
The SLP runs on Windows XP Home Edition/XP Professional/Vista (32 bit type)/7 (32 bit type, 64 bit type) (simply called “Windows” from here on) on a personal computer.

■ Loader functions

The SLP has the following functions:

- Setup
- Monitoring
- Adjustment

● Setup function

This function is for setting the required controller parameters on the personal computer and writing (transferring) them to the controller.

● Monitoring function

After the setup parameters have been written to the controller, it is possible to change and tune control constants while the controller is running, to switch modes (RUN/READY, AUTO/MANUAL, etc.), and to check RUN status and alarm occurrence.

The run state can also be checked on the Trend screen, and sampled data can be output in CSV format so that it can be handled in third-party spreadsheet software such as Microsoft Excel.

Handling Precautions

- The monitor target is limited to only one unit when monitoring is done via the loader jack on the front panel.

● Adjustment function

This function is used when the user adjusts controller input.
For details on the adjustment function, refer to:
☞ SDC45/46 Digital Indicationg Controller User's Manual for Installation and Configuration (CP-SP-1218E).

Handling Precautions

- Our guarantee does not cover problems caused by incorrect settings made by the customer. To reset the SDC to the factory default settings during adjustment, select [Option] → [Initilize calibrate parameter to factory value] from the pull-down menu. This will discard the user's settings and restore the factory defaults. If this is mistakenly done during adjustment, all user settings will be lost.

1 - 2 System Requirements

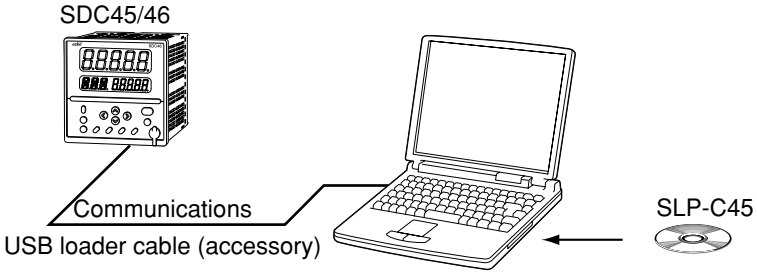
The following operating environment is required for using the SLP-C45:

■ Hardware

Item	Description	
Personal Computer	Target model	PC/AT compatibles with a Pentium chip or higher (500 MHz or more)
	Memory	32 MB or more
	Operating system	Windows XP Home Edition/XP Professional/ Vista (32 bit type)/7 (32 bit type, 64 bit type)
	USB Port	1 port or more
	Serial Port	1 port or more (When use the CMC10L)
Peripheral Devices	Display	1024 X 768 dot or more, 16 bit color or more
	Hard disk drive	Hard disk with at least 40 MB of free space
	CD-ROM drive	1 drive or more
	Pointing device	Windows-compatible mouse or equivalent device

■ Hardware configuration

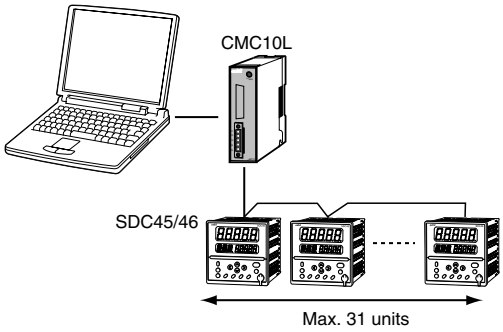
● General configuration



● Configuration with CMC10B/L

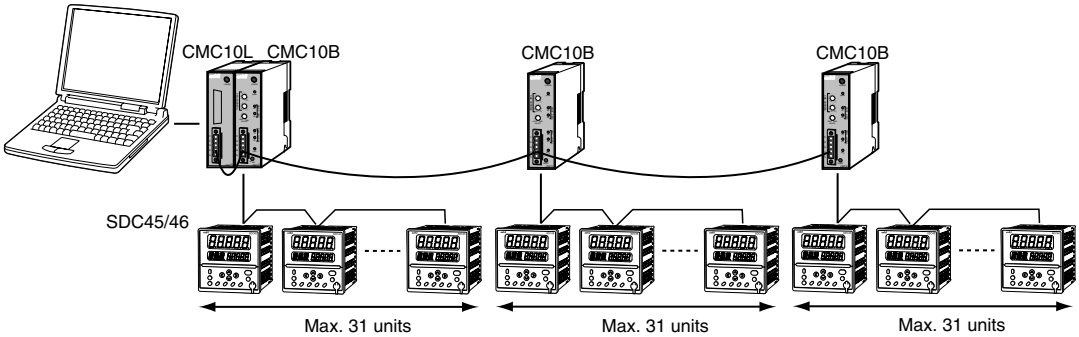
• When connecting up to 31 units

When connecting 31 or fewer SDC units, use the CMC10L communication controller (sold separately).The CMC10L can convert data for interchange between RS-232C and RS-485.
If the connected computer has a 3-wire RS-485 communications port, the CMC10L is not necessary.



• When connecting 32 units or more

When connecting 32 SDC units or more, use the CMC10L and multiple CMC10B communication controllers (sold separately).



🕮 Note

• Personal computers used for confirmation of hardware configuration.

Manufacturer	Model No.
Dell	PRECISION 380
IBM	ThinkPad A31

1 - 3 Installing the Loader

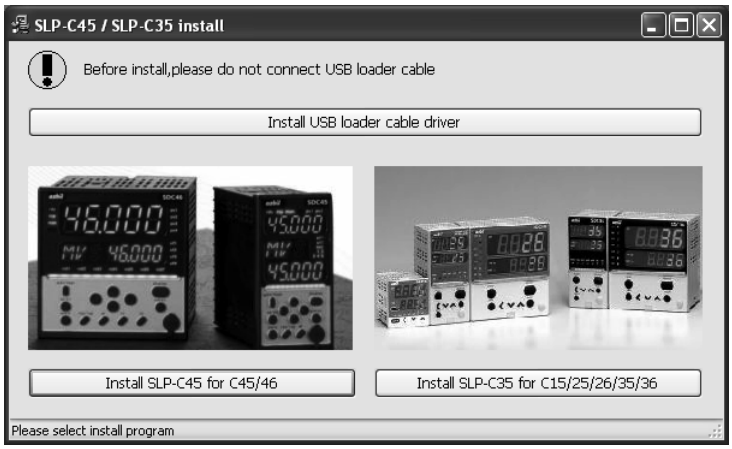
Install the SLP-C45 on the PC hard disk. Keep the installation CD as a backup.
This section describes how to install the SLP-C45 on a personal computer.

Handling Precautions

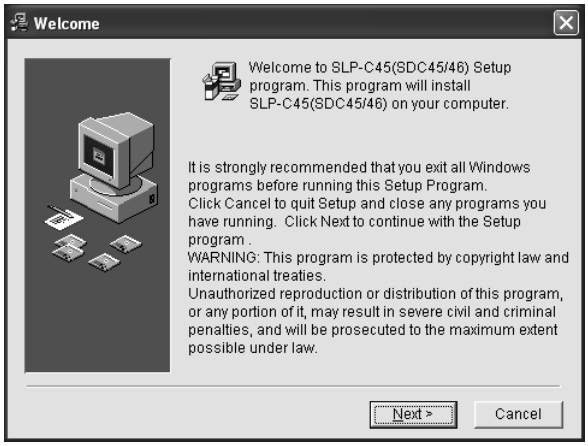
- The CD does not contain an operating system (OS), and cannot be used on a PC that lacks an OS.
- If you start the installer while another application is running, the installer may malfunction. Shut down other applications and then start the installer. The SLP-C45 sometimes cannot be started due to a particular combination of other applications and drivers.

  For details on Windows and personal computer settings, refer to the user's manuals provided with Windows and with the personal computer.
- Windows 2000 Professional/XP Professional:
  Only users belonging to the "Administrators" group can install/uninstall this software.
  Windows XP Home Edition:
  Only users belonging to the computer "Administrators" group can install/uninstall this software.

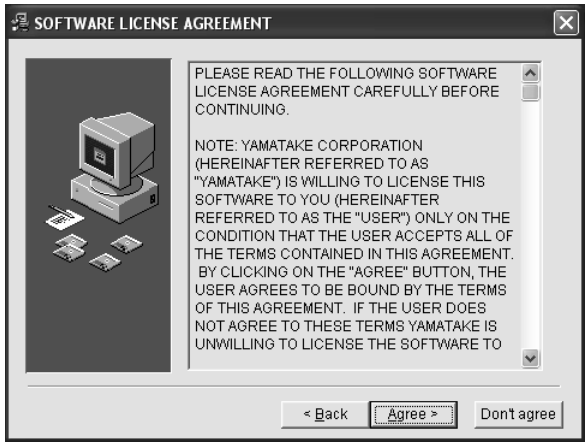
(1) Put the CD in the CD-ROM drive of your personal computer.
>> The following screen appears for installing the driver for the USB loader cable and selecting a SLP model (SLP-C45 and SLP-C35).


SLP-C45 / SLP-C35 install
Before install,please do not connect USB loader cable
Install USB loader cable driver
Install SLP-C45 for C45/46
Install SLP-C35 for C15/25/26/35/36
Please select install program

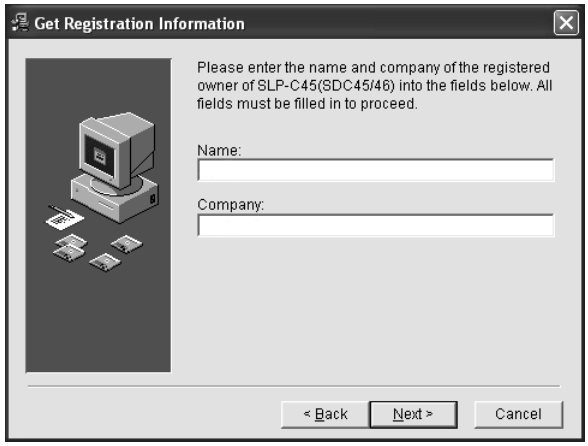
(2) Click the [Install SLP-C45 for C45/46] button.
>> The following screen appears:


Welcome
Welcome to SLP-C45(SDC45/46) Setup program. This program will install SLP-C45(SDC45/46) on your computer.
It is strongly recommended that you exit all Windows programs before running this Setup Program.
Click Cancel to quit Setup and close any programs you have running. Click Next to continue with the Setup program .
WARNING: This program is protected by copyright law and international treaties.
Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
Next >
Cancel

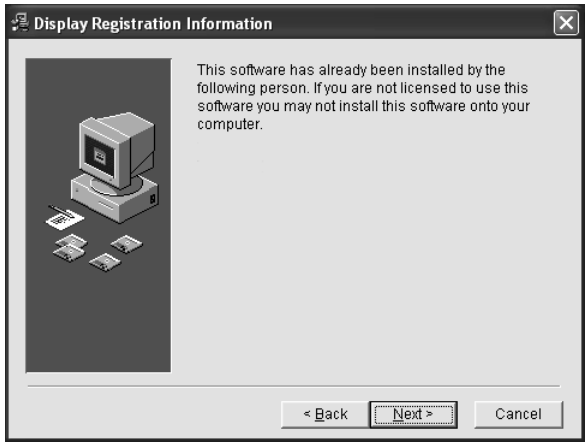
(3) Click the [Next >] button.
>> The following screen appears:


SOFTWARE LICENSE AGREEMENT
PLEASE READ THE FOLLOWING SOFTWARE LICENSE AGREEMENT CAREFULLY BEFORE CONTINUING.
NOTE: YAMATAKE CORPORATION (HEREINAFTER REFERRED TO AS "YAMATAKE") IS WILLING TO LICENSE THIS SOFTWARE TO YOU (HEREINAFTER REFERRED TO AS THE "USER") ONLY ON THE CONDITION THAT THE USER ACCEPTS ALL OF THE TERMS CONTAINED IN THIS AGREEMENT. BY CLICKING ON THE "AGREE" BUTTON, THE USER AGREES TO BE BOUND BY THE TERMS OF THIS AGREEMENT. IF THE USER DOES NOT AGREE TO THESE TERMS YAMATAKE IS UNWILLING TO LICENSE THE SOFTWARE TO
< Back
Agree >
Don't agree

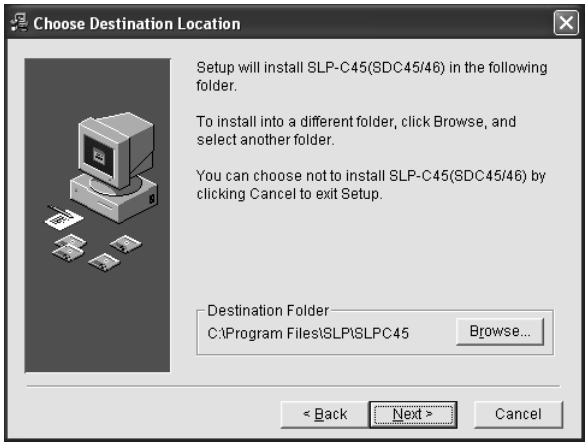
(4) If you agree to the software license agreement and wish to install the program, click [Agree >]. To abort the installation, click [Don't agree].
>> After clicking [Agree >], the following screen appears:


Get Registration Information
Please enter the name and company of the registered owner of SLP-C45(SDC45/46) into the fields below. All fields must be filled in to proceed.
Name:
Company:
< Back
Next >
Cancel

(5) Enter the user name and company name of a registered user, and then click the [Next >] button.
>> The following screen appears:


Display Registration Information
This software has already been installed by the following person. If you are not licensed to use this software you may not install this software onto your computer.
< Back
Next >
Cancel

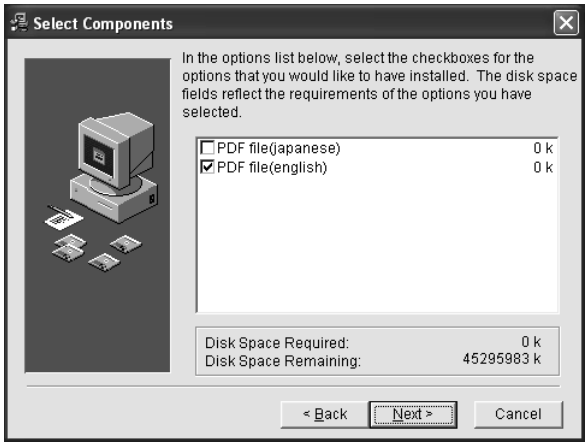
(6) Click the [Next >] button
>> The following screen appears:


Choose Destination Location
Setup will install SLP-C45(SDC45/46) in the following folder.
To install into a different folder, click Browse, and select another folder.
You can choose not to install SLP-C45(SDC45/46) by clicking Cancel to exit Setup.
Destination Folder
C:\Program Files\SLP\SLPC45
Browse...
< Back
Next >
Cancel

Note

- To change the installation destination directory, click [Browse...].

(7) Click the [Next >] button.
>> The following screen appears:

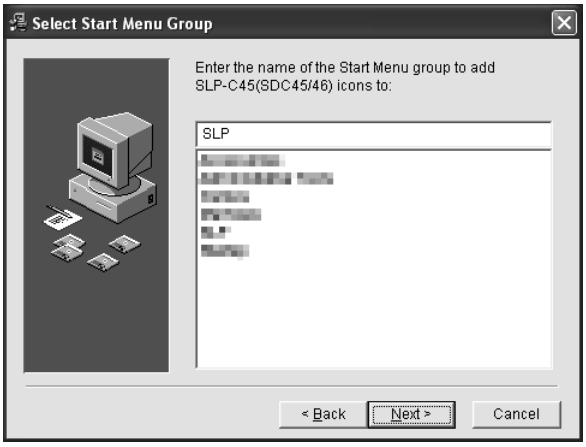

Select Components
In the options list below, select the checkboxes for the options that you would like to have installed. The disk space fields reflect the requirements of the options you have selected.
PDF file(japanese) 0 k
PDF file(english) 0 k
Disk Space Required: 0 k
Disk Space Remaining: 45295983 k
< Back
Next >
Cancel

Note

- Check the necessary files.
  To display a PDF file, it is necessary to install Adobe Reader.
  For details, refer to:
  ☞ Note on page 1-8.

(8) Check (put a check mark : ☑ before) the software components you wish to install and click the [Next >] button.

>> The following screen appears:

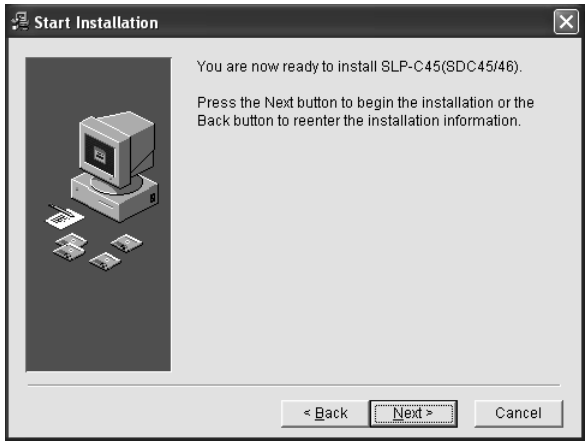


Note

- To change the start menu folder, enter the new folder name.

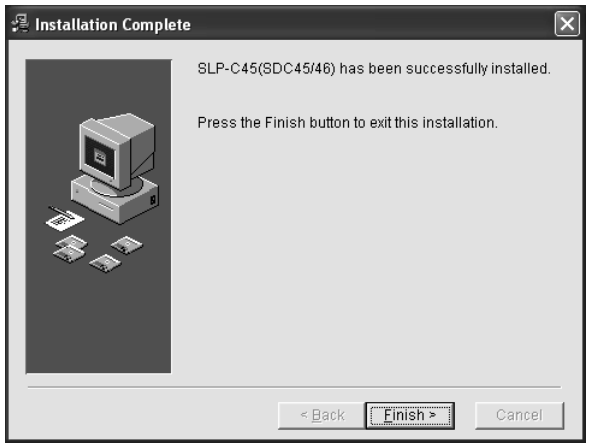
(9) Click the [Next >] button.

>> The following screen appears:


Start Installation
You are now ready to install SLP-C45(SDC45/46).
Press the Next button to begin the installation or the Back button to reenter the installation information.
< Back
Next >
Cancel

(10)Click the [Next >] button.

>> The following screen appears:


Installation Complete
SLP-C45(SDC45/46) has been successfully installed.
Press the Finish button to exit this installation.
< Back
Finish >
Cancel

(11)Click the [Finish >] button.

>>When the installation is completed successfully, the screen will return to the Windows screen.

Note

- Installation of Adobe Reader
  If Adobe Reader is not installed on your personal computer, install it using either of the following procedures:
  - Download Adobe Reader from the Adobe Systems home page.

1 - 4 Installing the USB Loader Cable Device Driver

A device driver must be installed before using the USB loader cable.
Follow the procedure below to install the device driver.

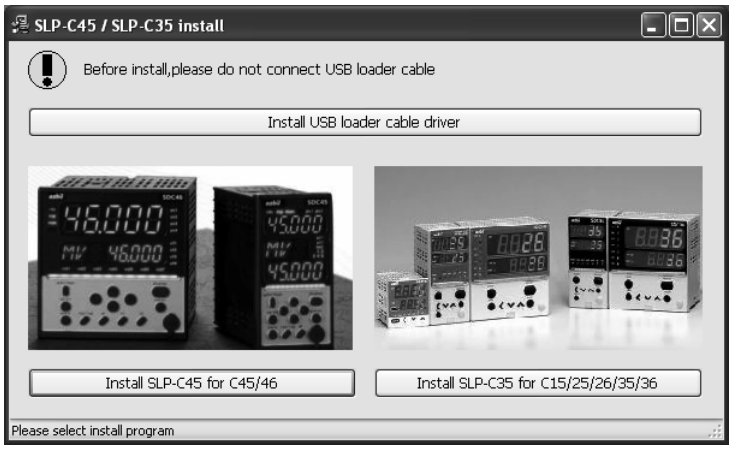
■ Installing the device driver

Handling Precautions

- Be sure to follow the procedure below when installing the device driver. The USB cable may not be recognized if the procedure is not followed. If the cable is not recognized, uninstall the driver and then install it again.
- Administrator privileges on the computer are required for driver installation. Installation should be done by the administrator or by a user who belongs to the administrator group. The USB loader cable is supported on Windows XP/Vista (32 bit type)/7 (32 bit type, 64 bit type). It is not supported on Windows XP(64 bit type), or on Windows 2000, Windows 95, Windows NT, MS-DOS or PC-DOS.
- If there are multiple USB ports, connect the USB loader cable to the same port every time. If it is connected to a different port, there is a chance that driver installation may be required again.

1. Put the SLP CD-ROM into the CD-ROM drive of the personal computer.

>>The installation program is then started up automatically and the following screen appears:


SLP-C45 / SLP-C35 install
Before install,please do not connect USB loader cable
Install USB loader cable driver
Install SLP-C45 for C45/46
Install SLP-C35 for C15/25/26/35/36
Please select install program

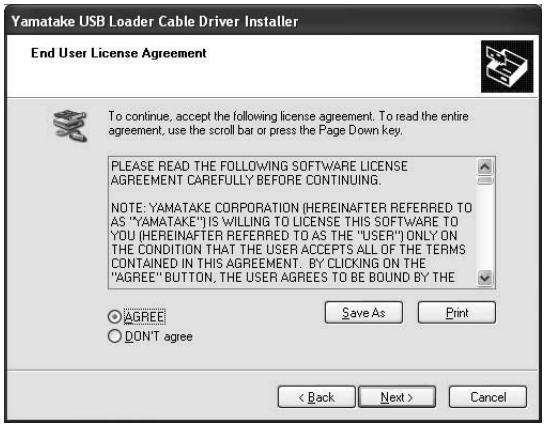
(1) Click the [Install USB loader cable driver] button.

>> The following screen appears:

Yamatake USB Loader Cable Driver Installer
Welcome to the USB Loader Cable Driver Installer!
This wizard will walk you through updating the drivers for your Yamatake USB device.
To continue, click Next.
< Back
Next >
Cancel

(2) Click the [Next >] button.

>> The following screen appears:


Yamatake USB Loader Cable Driver Installer
End User License Agreement
To continue, accept the following license agreement. To read the entire agreement, use the scroll bar or press the Page Down key.
PLEASE READ THE FOLLOWING SOFTWARE LICENSE AGREEMENT CAREFULLY BEFORE CONTINUING.
NOTE: YAMATAKE CORPORATION (HEREINAFTER REFERRED TO AS "YAMATAKE") IS WILLING TO LICENSE THIS SOFTWARE TO YOU (HEREINAFTER REFERRED TO AS THE "USER") ONLY ON THE CONDITION THAT THE USER ACCEPTS ALL OF THE TERMS CONTAINED IN THIS AGREEMENT. BY CLICKING ON THE "AGREE" BUTTON, THE USER AGREES TO BE BOUND BY THE
AGREE
DON'T agree
Save As
Print
< Back
Next >
Cancel

(3) Select [AGREE] and click the [Next>] button.

>>The following screen appears :

Yamatake USB Loader Cable Driver Installer
Installing the software for your Toaster device...
Please wait while the drivers install. This may take some time to complete.
< Back
Next >
Cancel

Software Installation
The software you are installing has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the software vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

(4) Click the [Continue Anyway] button.

>>The installation program then starts up, and after it is completed, the following screen appears:

Yamatake USB Loader Cable Driver Installer
Congratulations!
The drivers were successfully installed on this computer.
You can now connect your device to this computer. If your device came with instructions, please read them first.
Driver Name
Status
Yamatake (YCslp) USB ...
Ready to use
< Back
Finish
Cancel

(5) Click [Finish] button to complete the installation.

2. Insert the USB loader cable into the USB port.

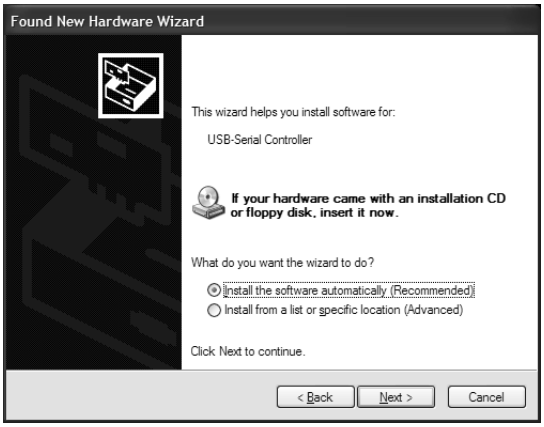
>>When Windows recognizes the USB loader cable, the notification shown below appears on the task tray and the driver installation wizard appears.

3. Install the device driver.

(1) Usually, when Windows recognizes the USB loader cable, the window shown below appears. (In some cases, depending on the Windows environment, it may not appear.) Select [No, not this time] and click the [Next >] button.

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission).
Read our privacy policy
Can Windows connect to Windows Update to search for software?
Yes, this time only
Yes, now and every time I connect a device
No, not this time
Click Next to continue.
< Back
Next >
Cancel

(2) For the retrieval location of the device driver to be installed, select the [Install the software automatically (Reccomended)] and click the [Next >] button.


Found New Hardware Wizard
This wizard helps you install software for:
USB-Serial Controller
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

>>Retrieval of the device driver starts.

>>When the device driver is found, the following window appears:

Hardware Installation
The software you are installing for this hardware:
Yamatake USB Loader Comm.port
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

(3) Click [Continue Anyway].

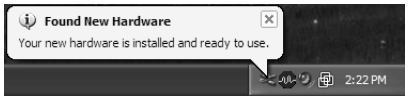
>>Installation of the device driver starts

>>When the device driver installation is complete, the following window appears:

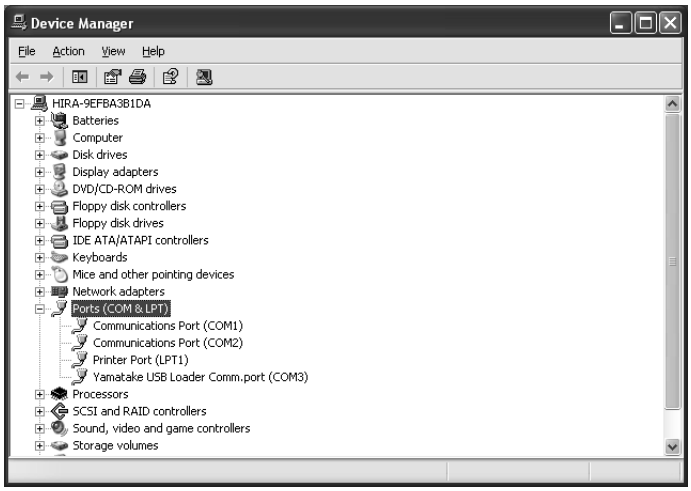
Found New Hardware Wizard
Completing the Found New Hardware Wizard
The wizard has finished installing the software for:
Yamatake USB Loader Comm.port
Click Finish to close the wizard.
< Back
Finish
Cancel

(4) Click [Finish].

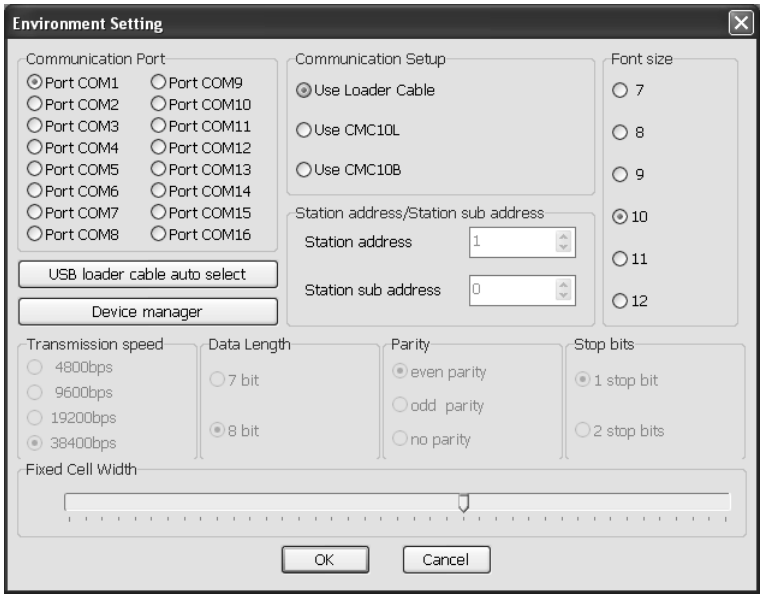
>>When the installation is complete, the notification shown below appears on the task tray, and Windows now correctly recognizes the USB loader cable.



(5) Select [Control Panel]→[System]→[Hardware]→[Device Manager] (for Windows XP), [Control Panel] → [Device Manager] (for Windows Vista/7), and find the port number for the Yamatake USB Loader Comm. from [Ports (COM & LPT)].



(6) Start the SLP, select [Menu] → [Option], and set to the communications port number obtained in the previous step. Then press the [OK] button to complete the configuration.



Note

- If the CD-ROM for the SLP is not available, execute [drvsetup.exe] (32 bit type) or [drvsetup64.exe] (64 bit type) on the computer on which the SLP is installed. Then install the device driver. Normally [C:\Program Files\slp\SLPC45] (32 bit type), or [C:\Program Files(x86)\slp\SLPC45](64 bit type).

■ Uninstalling the device driver

Handling Precautions

- Removing the driver requires restarting the computer. Close other applications first, and then uninstall the driver.
- To uninstall the driver, administrator rights are required on the computer. Uninstalling should be done by the administrator or by a user who belongs to the administrator group.

1. Execute the driver removal program.

(1) Go to [Control Panel] → [Add or Remove Programs] and click on [Windows Driver Package - Yamatake (YC slp) USB (04/10/2008 2.0.2.8)]. Click the [Change/Remove] button.

(2) Click the [Yes] button.

(3) Restart the computer.

Chapter 2. STARTING AND QUITTING THE LOADER

Handling Precautions

- Before starting the Smart Loader, quit all other applications.
  The program may not function if you start it while another application is running. Set the power save setting, infrared communications and screen saver to OFF.
- Make sure that the [Decimal symbol] has been set to " . " for [Control Panel] → [Regional Settings] → [Number]. If it has been set to some other character, the loader program cannot function correctly.
  (Example: for Windows XP, go to [Control Panel] → [Date, Time, Language, and Regional Options] → [Regional and Language Options] → [Regional Options] → [Customize...] → [Decimal symbol]. Select " . " and click [OK] button.)

■ Starting the loader

Double-click the SLP-C45 (SDC45, 46) icon on the desktop or click the [Start] button at the lower left portion of the screen and select [Programs] → [SLP] → [SLP-C45].
>>The SLP starts up and the menu window is displayed.

Note

- For operating system details and mouse setup, refer to the user's manuals provided with Windows.

■ Quitting the loader

Click the icon at the top right of the screen, or selecting [Menu] → [Quit] gives the same result.

Chapter 3. SETUP

3 - 1 Setup Function

■ Overview

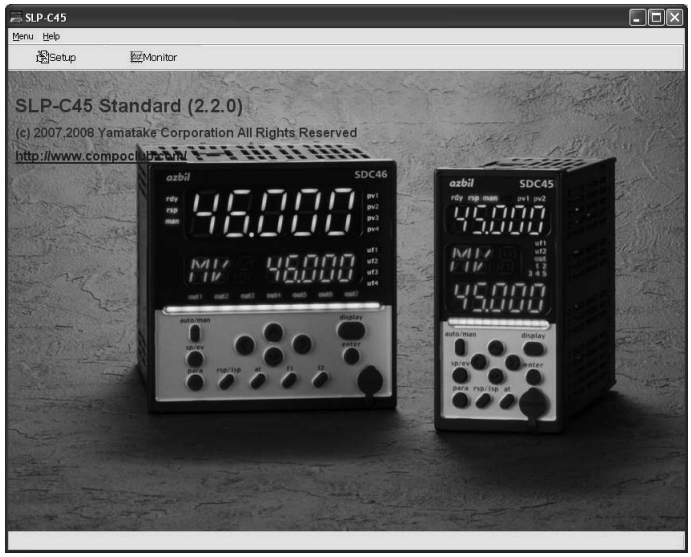
The setup function allows the user to set various parameters (required for operation) and write these parameters to the SDC so that it functions according to the user's particular control requirements. When the SDC is used for the first time, it will not function as required unless it is set up by using this setup function.

Parameters such as SP (set point) and control constants (PID values) that are changed relatively frequently while the SDC is running can also be set from the Smart Loaders monitor function screen.

With the setup function, parameters that rare need changing once they are set are saved to a file in list format before the SDC is started, and the saved file is called up and written to the SDC in a single operation.

■ Screen explanations

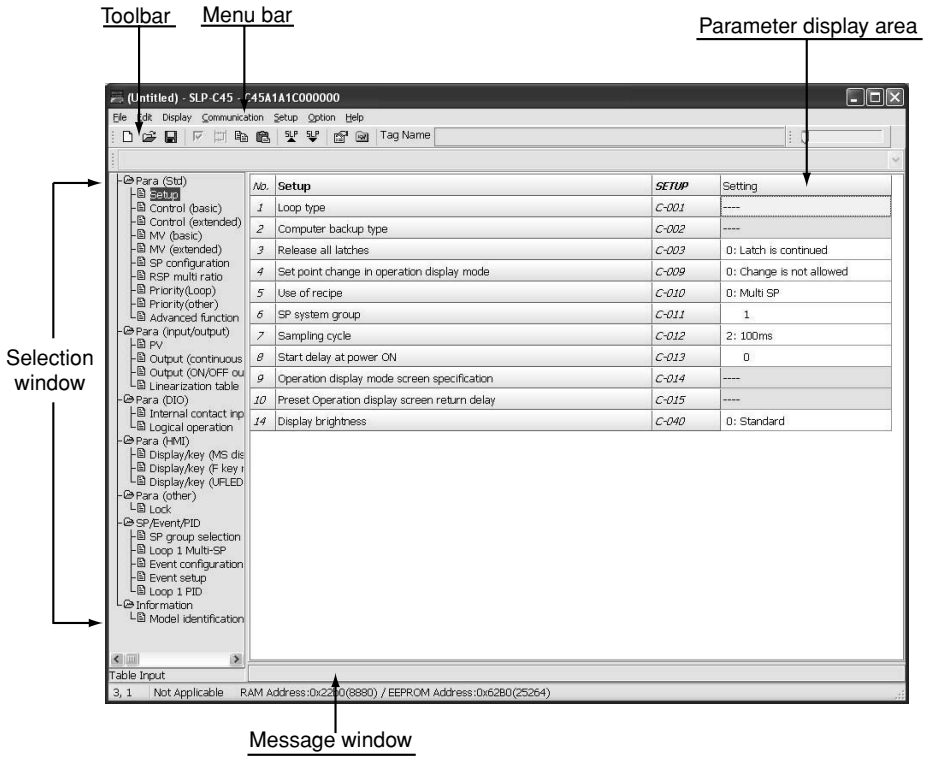
● Menu screen



- Menu configuration list

Menu	Icon	Submenu	Description	Shortcut Keys
Menu		Setup	Displays the Setup window.	[Ctrl]+[s]
		Monitor	Displays the Monitor/Trend window.	[Ctrl]+[m]
	-	Calibration (J)	Displays the Adjustment window.	[Ctrl]+[j]
	-	Option (E)	Changes the environment setup.	[Ctrl]+[e]
	-	Quit	Quits the application.	[Ctrl]+[q]
Help	-	Version (A)	Displays the version information.	[Ctrl]+[a]

● Setup screen



● Menu configuration list

Menu	Icon	Submenu		Description	Shortcut Keys
File		New		Creates new data.	[Ctrl]+[n]
		Open		Opens existing data.	[Ctrl]+[o]
		Save		Saves the active data.	[Ctrl]+[s]
	-	Save As		Saves the active data with a new name.	[Ctrl]+[a]
	-	CSV Out (X)	CSV Out (X)	Saves the active data in CSV format.	[Ctrl]+[x]
			CSV Out2 (Y)	-	-
			CSV Out3 (Z)	-	-
	-	HTML Out (H)	HTML Out1 (H)	Saves the active data in HTML format.	[Ctrl]+[h]
			HTML Out2 (I)	-	-
			HTML Out3 (J)	-	-
	-	Print		Prints out the data. (Same contents as data saved in the HTML format.)	-
	-	Recent File		Displays the recent file.	-
	-	Quit		Quits the application.	[Ctrl]+[q]
Edit	-	Data Check		Checks all setting values.	[Ctrl]+[d]
		Bit edit		Inputs to bit lists.	[Ctrl]+[b]
		Input/Output Port setup		Displays the input/output port setup screen.	[Ctrl]+[p]
		Copy		Makes a copy of the source.	[Ctrl]+[c]
		Paste		Pastes the stored copy data.	[Ctrl]+[v]
Display	-	Parameter disp area		Displays the parameter display area.	-
	-	Hint enable		Enables hint display.	-
	-	Auto size		Enables auto-cell size.	-
	-	Size initalize		Initializes the cell size.	-
	-	Cell size adjust		Matches cell size to the window.	-
	-	Graph		Displays the graph.	-
	-	Computation unit		Displays the computation unit. (Only computation unit)	-
Communication		Read (SDC -> SLP) (R)		Reads the device's data.	[Ctrl]+[r]
		Write (SLP -> SDC) (W)		Writes the data to the device.	[Ctrl]+[w]
	-	C45/46 Parameter initialize		Restore SDC45/46 parameters to their factory settings.	-
	-	Clock setup		Set the clock. (Only computation unit)	-
Setup	-	-		Displays the varioua items.	-
Option		Type Setting		Changes the type setup.	[Ctrl]+[t]
		Environment Setting		Changes the environment setup.	[Ctrl]+[e]
Help	-	Help		Displays the help.	[F1]
	-	Information		Displays the handling precaution.	-
	-	Version (A)		Displays the version information.	-

3 - 2 Method of Setup

Do setup offline (without connecting the USB loader cable to the SDC).
Click [Option] on the menu screen. Do the following setup tasks:

Step 1: Set the Smart Loader type
Step 2: Initialize (clear previous settings)
Step 3: Set up the environment
Step 4: Set up SDC parameters
Step 5: Save setup data
Step 6: Download the settings

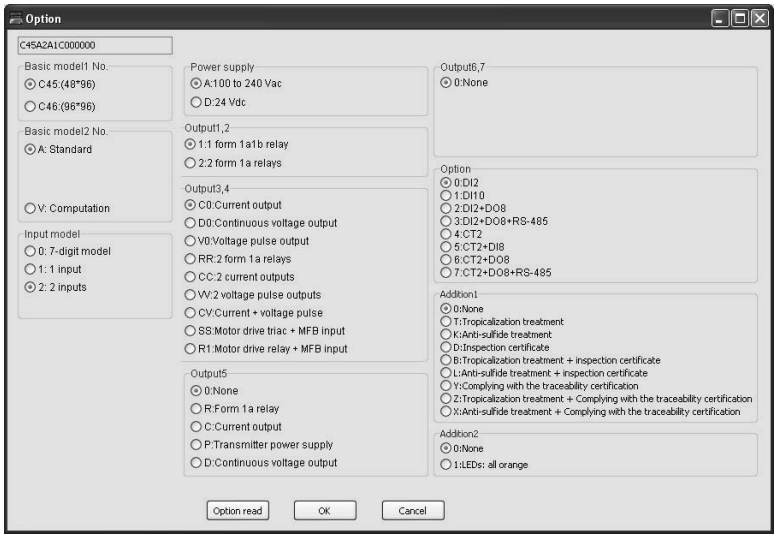
Handling Precautions

- Steps 1 to 5 are required before the setup parameters are written to the SDC. Be sure to perform these steps. Otherwise, the SDC may be set up incorrectly. For example, the required setup items may not be displayed or unneeded items may be displayed.
- Step 6: before the download, connect the controller to the computer using the USB loader cable.

● Step 1. Set the Smart Loder type

Set the loader program type to match the SDC model number.

(1) Click the icon.
Selecting [Option] → [Type Setting] or pressing the [Ctrl]+[t] keys gives the same result.
>> The Type Setting dialog box is displayed.



(2) Set the mounting type, control output, input type, power voltage and additional functions.
(3) Choose the desired selections for each item.
(4) Click the [OK] button.

Handling Precautions

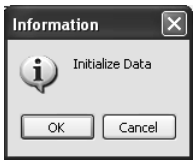
- The type set here is a setting for the internal use of the loader program. The model number of the SDC will not change even if the type is changed in the loader program.

Note

- For an explanation of each of the specifications, refer to:
  ☞ SDC45/46 Digital Indicating Controller User's Manual for Installation and Configuration (CP-SP-1218E).

● Step 2. Initialize

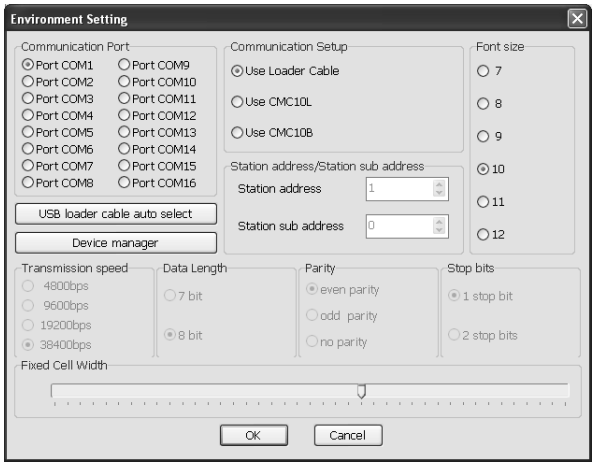
(1) Click the icon.
Selecting [File] → [New] or pressing the [Ctrl]+[n] keys gives the same result.
>>The Initialize Data dialog box appears.



(2) Click the [OK] button.
>> A new file opens.

● Step 3. Set up the environment

Before setting, connect the USB loader cable to the computer.
Set the communications port and font on the personal computer.
(1) Click the icon.
The operation is the same by Selecting [Option] → [Environment Setting] or pressing the [Ctrl] + [e] keys gives the same result.
>>The Environment Setting dialog box appears.



(2) To set the optimum communications port automatically, click the [USB loader cable auto select] button.

(3) Select the desired font size.

(4) Click the [OK] button.

Handling Precautions

- Normally, use the port that was selected after you clicked the [USB loader cable auto select] button.
  Even if another communications port can be selected, it sometimes cannot be used depending on its characteristics.
- Normally, select "Use Loader Cable."

● Step 4. Set up the SDC45/46 parameters

Set each of the parameters required for running the SDC.

Move the cursor to the target channel for each setup item, and do the following:

- When the setting is a numerical value
  Enter the numerical value, and press the [Return] key.
- When the setting is selected by a number
  Press the right mouse button (right-click) on a setup item. The list of settings you can select will appear. Select a desired item to complete the setting.

Handling Precautions

- "– – – –" is displayed within the cell if setup of a parameter is not required or is prohibited by previous settings. The parameter cannot be set. If neccessary, re-check the type setting or other related settings.
- About connection to the personal computer
  Normally, the controller is connected to the personal computer with the dedicated cable.

  By selecting [Option] → [Environment Setting] and setting [Communication Setup] to [Use CMC10L] or [Use CMC10B], the controller can be connected through the CMC10B/L. In this case, the environment setting and communication setup on the controller main unit must be configured beforehand.

  Configure the controller settings in the offline mode (with the cable not connected to the controller).

Note

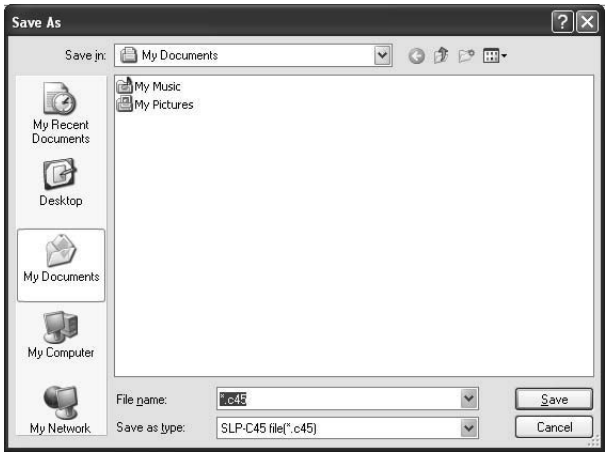
- For details on functions, refer to:
  ☞ SDC45/46 Digital Indicating Controller User's Manual for Installation and Configuration (CP-SP-1218E).

● Step 5. Save setup data

When you have finished with the settings, save them to a file.
Saving settings in advance and using saved settings greatly reduces the time required to set up the loader program. The following items are saved:

• Type
• Setup parameters

(1) Select [File] → [Save As] or press [Ctrl]+[a] keys.
>>The Save As dialog box appears.



(2) Enter the desired file name and click the [Save] button.

● Step 6. Download the settings

Write the set parameters or parameters called up from a saved file to the SDC.
(1) Use the dedicated Smart Loader cable to connect the personal computer to the SDC.
(2) Turn the SDC on.
(3) Click the SLP icon.
Selecting [Communication] → [Write (SLP→SDC)] from the pull-down menu gives the same result.
>> The message "Writing is going to be executed" is displayed.
(4) Click the [OK] button.
>> This starts the writing of the setup parameters.
During writing, the message [Please wait] is displayed. When writing ends, the message [Normal end] is displayed.

⚠ Handling Precautions

• If writing fails, the message [Communications error has occurred] is displayed. If writing is not possible, refer to:
☞ Chapter 5. TROUBLESHOOTING.

Chapter 4. MONITORING

4 - 1 Monitoring Function

■ Overview

The SLP has the following two monitor screens:

• Numeric Monitor screen:

This screen is for performing operations such as changing settings or switching modes.

- Numeric display of the various RUN parameters (parameters can be changed)
- Indicator lamps for the various operation modes (lamp indications can be operated)
- Alarm display (summary and detailed)

• Trend Monitor screen:

This screen is for monitoring the RUN status of the SDC in the form of a trend graph.

- Screen display of trends for max. of sixteen data items
- Screen display of digital data trends for max. of five data items
- Export of sampled data as a CSV file *
- Trend screen saving
- Data type:
  PV, SP, MV, user-defined data (all analog data that can be communicated)
- Sampling cycle:
  250 ms, 500 ms, Variable from 1 to 3600 s (If the sampling cycle is 250 ms or 500 ms, the screen displays a max. of four data items and the display of digital data trends is disabled.)
- Max. sampling number:
  60,000 (5,000, 10,000, 30,000, or 60,000 can be selected in the [Setup] → [Trend option] window).
  If the sampling count exceeds the maximum, subsequent sampling data will be saved in the next file.

* CSV (comma-separated value) is a data format that can be handled by third-party spreadsheet software such as Microsoft Excel. With this format, sampled trend data can be interpreted by spreadsheet software.

These screens can be used to perform the following operations:

- Monitoring of RUN status and changing of parameters on the Numeric Monitor screen
- Switching of the RUN mode on the Numeric Monitor screen
- Tuning of control constants on the Numeric Monitor screen
- Monitoring of trends and sampling of data while the SDC is running
- Monitoring of alarm status on the Numeric Monitor screen

■ Before use

(1) Before starting to monitor, connect the SDC to the computer using the USB loader cable.

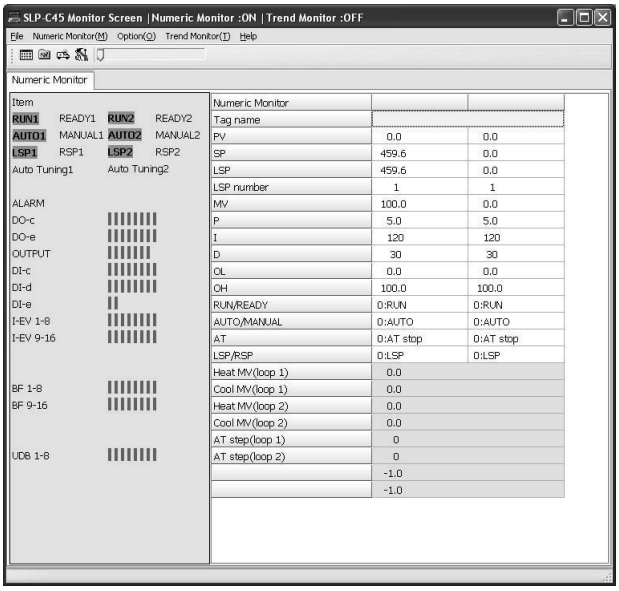
(2) To display the monitoring screen, click [Monitor] in the menu window.

! Handling Precautions

- When setting up or operating the monitoring function using the loader program, connect the dedicated cable.
- Before starting the Trend Monitor, configure suitable monitoring settings.
- The sampling cycle sometimes shifts due to fluctuations in the communications cycle. To perform measurement at exact times, use a special recorder or data logger.

■ Screen explanations

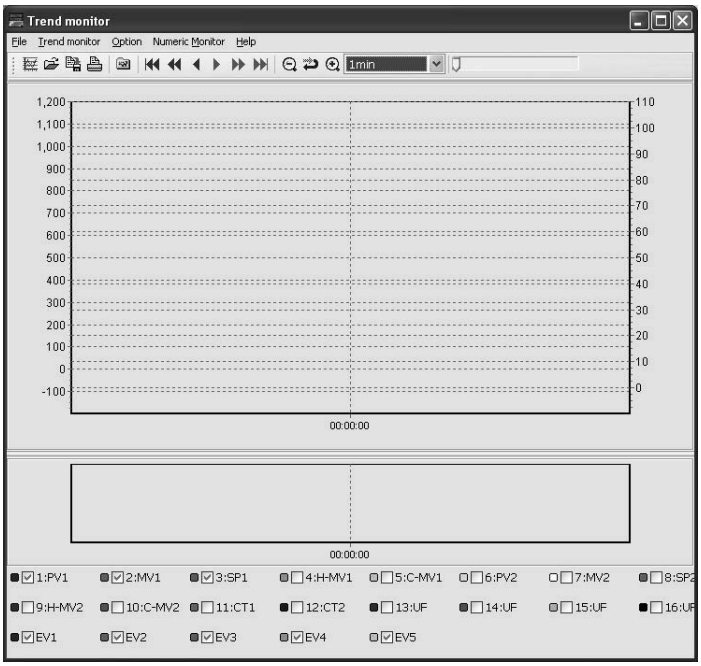
● Numeric monitor screen



- Menu configuration list

Menu	Icon	Submenu	Description	Shortcut Keys
File	-	Quit	Quits the monitor window.	[Ctrl]+[q]
Numeric Monitor (M)		Numeric Monitor Start/Stop (M)	Starts/stops the monitor.	[Ctrl]+[m]
Option (O)		Setup	Displays the Setup window.	-
		Alarm (A)	Displays the Alarm Details window.	-
		Command Line (C)	Displays the Command Line window.	-
Trend Monitor (T)	-	-	Changes the display to the Trend Monitor.	-
Help	-	Version (A)	Displays the version information.	-

● Trend monitor screen



- Menu configuration list

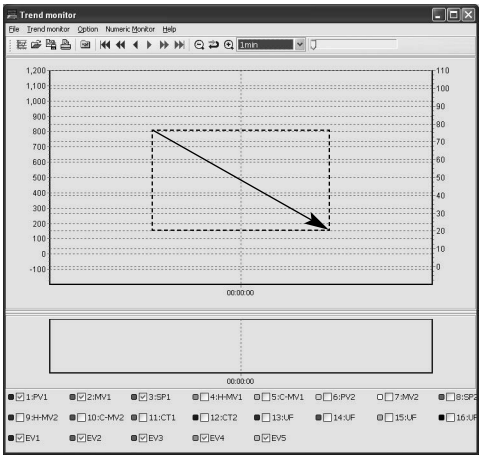
Menu	Icon	Submenu	Description	Shortcut Keys
File	-	Quit	Quits the monitor window.	[Ctrl]+[q]
Trend monitor		Trend Monitor Start/Stop (T)	Starts/stops the Trend Monitor.	[Ctrl]+[t]
		Clipboard Graph Out	Outputs an image of the graph to the windows Clipboard.	[Ctrl]+[c]
Option		Setup	Displays the Setup window.	-
Numeric Monitor	-	-	Changes the display to the Numeric Monitor	-
Help	-	Version (A)	Displays the version information.	-

- Icon list

Icon	Description
	Views the graph at the start time.
	Views the graph segment 1/2 screen to the left.
	Views the graph segment 1/4 screen to the left.
	Views the graph segment 1/4 screen to the right.
	Views the graph segment 1/2 screen to the right.
	Views the graph at the latest time.
	Zooms the graph out.
	Undoes the graph zoom.
	Zooms the graph in.
	Specify a time scale for the graph. 1min. 2min. 10min. 1hr. 12hrs. 24hrs. Auto

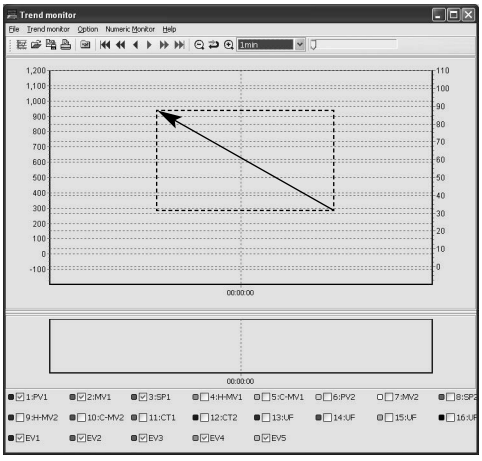
• Zooming the graph

Drag the mouse from the upper left portion to the lower right portion with the left mouse button pressed.



• Canceling the zoomed graph

Drag the mouse from the lower right portion to the upper left portion with the left mouse button kept pressed.



4 - 2 Method of Operation

■ How to operate the numeric monitor screen

● Start of monitoring (start of communications)

The operation described below is required to start monitoring.
Otherwise, monitoring and rewriting of data cannot be performed.

• Click the icon.
Selecting [Numeric Monitor] → [Numeric Monitor Start] gives the same result.
>> In normal operation: The data on the SDC is displayed.
In case of an error: The message [Check the device to which the loader is connected] is displayed. Remedy according to Chapter 5, TROUBLESHOOTING.

The following operations are possible when the device and the loader are correctly connected:

● Monitoring of run state and changing of parameters

Numeric monitor (displayed in table format) Numeric group monitor	Tag name Process Variable (PV) Set point (SP) Manipulated variable (MV)
Status monitor (displayed in lamp lighting status)	RUN/READY mode AUTO/MANUAL mode LOCAL/REMOTE status Auto-tuning start/stop status Self-tuning start/stop status ALARM mode Control output ON/OFF status Event output ON/OFF status Internal event ON/OFF status DI terminal ON/OFF status
Operation (Changes in numeric values are limited to those shown.)	SP value change SP set change MV change in MANUAL mode PID value change RUN↔READY change AUTO↔MANUAL change Auto-tuning start↔stop change
About the operation mode	RUN/READY mode 0: RUN 1: READY AUTO/MANUAL mode 0: AUTO 1: MANUAL

● **Changing of data**

Enter the numerical value, and press the [Return] key.

● **Setting of user-defined address**

Optional data not in the table can be registered to user configuration address UF 1 to 8 in the table. Data can be read or written according to the data type.

• How to set user-defined address:

(1) Select the [Set monitor] tag under [Option (O)] → [Setup] in the pull-down menu.

(2) Enter the address of the data to display according to SDC45/46 Digital Indicating Controller User's Manual for Installation and Configuration (CP-SP-1218E).

● **Use of the command line**

Data can be read or written or the mode switched by directly entering communications commands on the command line.

Handling Precautions

- Transmission of the wrong command may result in problems for the SDC. For this reason, take care when describing command types, addresses, data and other information.
- For details on communications commands and data addresses, refer to;
  ☞ SDC45/46 Digital Indicating Controller User's Manual for Installation and Configuration (CP-SP-1218E).
- Loader lock must be canceled.

● **Checking details of alarms**

You can check alarm details in the Alarm window when an alarm occurs.

• Click the icon.

Selecting [Option] → [Alarm] gives the same result.

>> The details of the alarm that is occurring are displayed.

Handling Precautions

- This window displays the details of currently occurring alarms, and cannot be used to reset the SDC alarm. To reset the SDC alarm, follow the instructions in Chapter 5, TROUBLESHOOTING.

● **About the numeric group monitor**

The numeric group monitor can be used when [Environment Setting] → [Communication Setup]→[Connect via CMC10] is selected. Connect the loader cable to the CMC10B/L.

Up to eight groups can be monitored.

■ How to operate the trend monitor

● Setup

Select [Trend], [Trend monitor individual], and [Digital trend] under [Option (O)] → [Setup], and make the following settings for each data sample (1 to 16). The cycle and display upper/lower limits are common to all channels.

• Trend

Setting Item	Description	Setting Range	Factory Setting
Cycle	Setting of sampling cycle	1 to 3600s	1
Display low limit of left axis	Lower value of vertical axis of screen display	-1999 to display upper limit	0
Display high limit of left axis	Upper value of vertical axis of screen display	Display lower limit to 32000	1200
Display low limit of right axis	Lower value of vertical axis of screen display	-1999 to display upper limit	-10
Display high limit of right axis	Upper value of vertical axis of screen display	Display lower limit to 32000	110

• Trend monitor individual

Setting Item	Description	Setting Range	Factory Setting
Data type	Type of sampled data	0: Not used 1: PV 2: MV 3: SP 4: H-MV 5: C-MV 6: CT1 7: CT2 8: SP2 9: H-MV2 10: C-MV2 11: CT1 12: CT2 13: User-defined data	-
Axis	Specify an axis used for the graph.	0: Left 1: Right	-
User-defined address	Address of relevant parameter when the data type is set as “user type”.	Address of communicable parameter	256
Station address	Set the station address when a CMC10B, for example, is used.	0 to 127	1
Station sub-address	Set the station sub-address when a CMC10B, for example, is used.	0 to 127	0

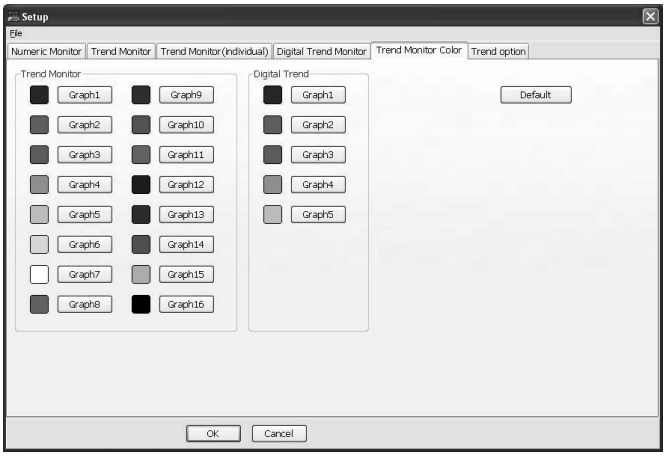
Handling Precautions

- When a user-defined address is specified, make the decimal point setting manually.

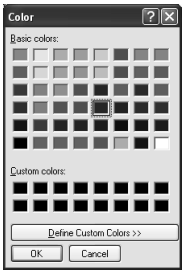
• Digital trend

Setting Item	Description	Setting Range
Address	Address of parameter	256 to 65535
Bits	Number of bits in parameter	0 to 15
Name	Name of parameter	Up to 10 alphanumeric characters

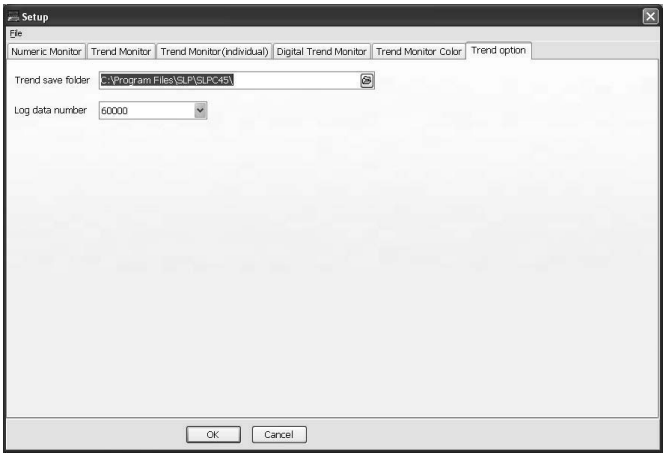
• Selecting trend monitor colors



When selecting [Graph 1] to [Graph 16], the color selection screen will appear. Select a desired color. Clicking [Default] will return the color setting to its initial value.



• Setting trend options



[Trend save folder]

Specify a folder in which to save the sampling trend data.

[Log data number]

Select the number of trend data logs from the list below.

5000

10000

30000

60000 (Initial value)

● Starting data sampling

When setup is complete, start the trend monitor.
Click the icon. Selecting [Trend Monitor] → [Trend Monitor Start] gives the same result.

>> Data sampling starts, and a graph of the specified parameters is displayed on the screen.

- Once the trend monitor starts, it continues until a stop command is received or until the data for 60,000 cycles is sampled.
- If no stop command is received, old data is overwritten as neccessary until data sampling for 60,000 cycles is complete.
- The screen can be changed to the "Numeric Monitor" screen while the trend monitor is running. However, the loader program cannot be shut down and the screen cannot be changed to the Setup screen. It is necessary to quit the trend monitor first.

● Stopping data sampling

Select [Trend Monitor] → [Trend Monitor Stop].
>> The trend monitor stops running.

● Saving sampled data

The data sampled using the trend monitor can be saved to a file in CSV format. The sampled data saved in CSV format can be processed using spreadsheet applications such as Microsoft Excel.
Files are named on the pattern log YYYYMMDDHHMMSS.csv (example: log 20070307153019.cvs) and are stored on the PC in the folder in which the SLP is installed. (The destination folder can be changed in the [Trend save folder] trend option setting window.)

Handling Precautions

- Data that has been saved to a file, is retained on the personal computer until it is removed. However, data saved to a file cannot be redisplayed in the loader program. To display it, use a spreadsheet application.

● Copying a graph to the Clipboard

The trend monitor screen display can be directly copied to the Windows Clipboard as a screenshot.

Chapter 5. TROUBLESHOOTING

5 - 1 Error Messages and Remedy

■ Setup error messages

Category	Message	Description	Remedy
Loader system error	Can't start up three or more SLP-C45s at once.	Three or more loaders are started at the same time.	Click [OK] button.

■ Communications error messages

Category	Error Message	Description	Remedy
Communications error	Timed out.	•No signal was received within the required period of time. •A device other than the SDC is connected. •The SDC unit is not connected.	•Check the cable connections and contacts. •Connect the PC to the SDC.
	Cannot open communications port.	The communications port could not be opened.	Do not run the loader and an other application that uses the communications port at the same time.
	Communications error has occurred.	A system error occurred.	Try again or quit the loader and restart Windows.
	Trend monitor is active.	The requested action is not possible while the trend monitor is running.	Stop the trend monitor and try again.
SDC45/46 status error	Cannot support currently connected SDC45/46.	Wrong loader program version for this SDC unit.	Contact the azbil Group or its dealer.
	Loader lock or Communications lock.	The data cannot be loaded from the loader because the loader is locked or the password is set.	Cancel the loader lock or password and try again.

■ File error messages

Category	Error Message	Description	Remedy
File name error	This file name is not valid.	An invalid file name was input.	Input a correct file name.
	This file cannot be found. Make sure that the correct path and filename are given.	Nonexistent file or wrong directory.	Input an existing file name.
	This filename is a reserved device name. Use a different filename.	A file name reserved for the device name is input.	Input the correct file name and directory.
Disk error	Not enough free space on disk.	The disk free capacity is insufficient.	Free some disk space.
	The device is not ready.	The disk drive is not ready.	Insert a disk and try again.
	Cannot make file.	The CD-ROM was specified as the save destination.	Save the file to another location.
	File name too long.	The file name is too long.	Use 256 characters or less for the file name.
Path name error	The path does not exist. Make sure that the correct path is given.	An illegal path name was input.	Input a correct path name and try again.
File information error	Illegal file size.	The file is corrupt.	Corrupted file cannot be used. Create the file again.
	Illegal file information.		

5 - 2 Other Troubleshooting

Problem	Description	Remedy
Numeric values are not displayed correctly.	If a decimal point symbol other than " . " (period) is set, the loader does not function correctly.	Check that the decimal point symbol is " . " (period). If not, set it to " . " (period).

Note

- " . " (period) should be set as the decimal separating symbol in the Windows control panel.
  Example: for Windows XP, go to [Control Panel]→[Date, Time, Language, and Regional Options]→[Regional and Language Options] → [Regional Options] → [Customize...] → [Decimal symbol]. Select " . " and click [OK] button.

Revision History

Printed date	Manual Number	Edition	Revised pages	Description
July 2008	**CP-UM-5458E**	**1st Edition**		
Apr. 2012		**2nd Edition**		Company name changed.
Apr. 2013		**3rd Edition**	1-1, 1-2 1-9 1-15 4-3 4-7	Operating Environment, Windows 2000 Professional/XP/Vista changed to Windows XP Home Edition/XP Professional/ Vista (32 bit type)/7 (32 bit type, 64 bit type). “Handling Precautions” was changed. “Note” was changed. USB(04/19/2007 1.0.0)→USB(04/10/2008 2.0.2.8) “Menu configuration list” was changed. Table of “• Trend” was changed. (Display lower limit to 9999→Display lower limit to 32000)

Terms and Conditions

We would like to express our appreciation for your purchase and use of Azbil Corporation's products.
You are required to acknowledge and agree upon the following terms and conditions for your purchase of Azbil Corporation's products (field instruments, control valves, and control products), unless otherwise stated in any separate document, including, without limitation, estimation sheets, written agreements, catalogs, specifications and instruction manuals.

1. Warranty period and warranty scope

1.1 Warranty period

Azbil Corporation's products shall be warranted for one (1) year from the date of your purchase of the said products or the delivery of the said products to a place designated by you.

1.2 Warranty scope

In the event that Azbil Corporation's products has any failure attributable to azbil during the aforementioned warranty period, azbil shall, without charge, deliver a replacement for the said product to the place where you purchased, or repair the said product and deliver it to the aforementioned place.

Notwithstanding the foregoing, any failure falling under one of the following shall not be covered under this warranty:

(1) Failure caused by your improper use of Azbil Corporation's products (noncompliance with conditions, environment of use, precautions, etc. set forth in catalogs, specifications, instruction manuals, etc.);
(2) Failure caused for other reasons than Azbil Corporation's products;
(3) Failure caused by any modification or repair made by any person other than azbil or azbil's subcontractors;
(4) Failure caused by your use of Azbil Corporation's products in a manner not conforming to the intended usage of that product;
(5) Failure that the state-of-the-art at the time of Azbil Corporation's shipment did not allow us to predict; or
(6) Failure that arose from any reason not attributable to Azbil Corporation, including, without limitation, acts of God, disasters, and actions taken by a third party.

Please note that the term "warranty" as used herein refers to equipment-only-warranty, and Azbil Corporation shall not be liable for any damages, including direct, indirect, special, incidental or consequential damages in connection with or arising out of Azbil Corporation's products.

2. Ascertainment of suitability

You are required to ascertain the suitability of Azbil Corporation's products in case of your use of the same with your machinery, equipment, etc. (hereinafter referred to as "Equipment") on your own responsibility, taking the following matters into consideration:

(1) Regulations and standards or laws that your Equipment is to comply with.
(2) Examples of application described in any documents provided by Azbil Corporation are for your reference purpose only, and you are required to check the functions and safety of your Equipment prior to your use.
(3) Measures to be taken to secure the required level of the reliability and safety of your Equipment in your use
Although Azbil Corporation is constantly making efforts to improve the quality and reliability of Azbil Corporation's products, there exists a possibility that parts and machinery may break down. You are required to provide your Equipment with fool-proof design, fail-safe design, anti-flame propagation design, safety design, or the like so that the said Equipment may satisfy the level of the reliability and safety required in your use, whereby preventing any occurrence of physical injuries, fires, significant damage, and so forth.

3. Precautions and restrictions on application

Azbil Corporation's products other than those explicitly specified as applicable (e.g. azbil Limit Switch For Nuclear Energy) shall not be used in a nuclear energy controlled area (radiation controlled area). Any Azbil Corporation's products shall not be used for/with medical equipment.

In addition,

you are required to conduct a consultation with our sales representative and understand detail specifications, cautions for operation, and so forth by reference to catalogs, specifications, instruction manual , etc. in case that you intend to use Azbil Corporation's products for any purposes specified in (1) through (6) below.

Moreover, you are required to provide your Equipment with fool-proof design, fail-safe design, anti-flame propagation design and other designs of protection/safety circuit on your own responsibility to ensure the reliability and safety, whereby preventing problems caused by failure or nonconformity.

(1) For use under such conditions or in such environments as not stated in technical documents, including catalogs, specification, and instruction manuals
(2) For use of specific purposes, such as:
  * Nuclear energy/radiation related facilities
    [For use outside nuclear energy controlled areas] [For use of Azbil Corporation's Limit Switch For Nuclear Energy]
  * Machinery or equipment for space/sea bottom
  * Transportation equipment
    [Railway, aircraft, vessels, vehicle equipment, etc.]
  * Antidisaster/crime-prevention equipment
  * Burning appliances
  * Electrothermal equipment
  * Amusement facilities
(3) Supply systems such as electricity/gas/water supply systems, large-scale communication systems, and traffic/air traffic control systems requiring high reliability
(4) Facilities that are to comply with regulations of governmental/public agencies or specific industries
(5) Machinery or equipment that may affect human lives, human bodies or properties
(6) Other machinery or equipment equivalent to those set forth in items (1) to (5) above which require high reliability and safety

4. Precautions against long-term use

   Use of Azbil Corporation's products, including switches, which contain electronic components, over a prolonged period may degrade insulation or increase contact-resistance and may result in heat generation or any other similar problem causing such product or switch to develop safety hazards such as smoking, ignition, and electrification.

   Although acceleration of the above situation varies depending on the conditions or environment of use of the products, you are required not to use any Azbil Corporation's products for a period exceeding ten (10) years unless otherwise stated in specifications or instruction manuals.

5. Recommendation for renewal

   Mechanical components, such as relays and switches, used for Azbil Corporation's products will reach the end of their life due to wear by repetitious open/close operations.

   In addition, electronic components such as electrolytic capacitors will reach the end of their life due to aged deterioration based on the conditions or environment in which such electronic components are used. Although acceleration of the above situation varies depending on the conditions or environment of use, the number of open/close operations of relays, etc.

   as prescribed in specifications or instruction manuals, or depending on the design margin of your machine or equipment, you are required to renew any Azbil Corporation's products every 5 to 10 years unless otherwise specified in specifications or instruction manuals.

   Field instruments (sensors such as pressure/flow/level sensors, regulating valves, etc.) will reach the end of their life due to aged deterioration of parts.

   For those parts that will reach the end of their life due to aged deterioration, recommended replacement cycles are prescribed. You are required to replace parts based on such recommended replacement cycles.

6. Other precautions

   Prior to your use of Azbil Corporation's products, you are required to understand and comply with specifications (e.g., conditions and environment of use), precautions, warnings/cautions/notices as set forth in the technical documents prepared for individual Azbil Corporation's products, such as catalogs, specifications, and instruction manuals to ensure the quality, reliability, and safety of those products.

7. Changes to specifications

   Please note that the descriptions contained in any documents provided by Azbil Corporation are subject to change without notice for improvement or for any other reason.

   For inquires or information on specifications as you may need to check, please contact our branch offices or sales offices, or your local sales agents.

8. Discontinuance of the supply of products/parts

   Please note that the production of any Azbil Corporation's products may be discontinued without notice.

   For repairable products, we will, in principle, undertake repairs for five (5) years after the discontinuance of those products. In some cases, however, we cannot undertake such repairs for reasons, such as the absence of repair parts.

   For field instruments, we may not be able to undertake parts replacement for similar reasons.

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